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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,948	12/13/2001	Robert Hundt	10019984-1	7386

7590 06/17/2005

HEWLETT-PACKARD COMPANY  
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P.O. Box 272400  
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EXAMINER

KANG, INSUN

ART UNIT PAPER NUMBER

2193

DATE MAILED: 06/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/016,948

Applicant(s)

HUNDT ET AL.

Examiner

Insun Kang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. This action is in response to the amendment filed 2/7/2005.
2. Claims 1-21 are pending in the application.

***Drawings***

3. The drawings filed 2/7/2005 have been accepted.

***Specification***

4. The objection to the specification has been withdrawn due to the amendment to the Specification.

***Double Patenting***

5. The terminal disclaimer filed 2/7/2005 has been acknowledged.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's Admitted Prior Art (hereinafter referred to as "APA") disclosed in the background section of the instant application.

Per claim 1:

APA discloses:

- a) detecting a request for first unwind information related to first corresponding dynamically generated code (APA, "The pseudo-modules are utilized by the software component seeking to register an instrumented function along with its unwind information," page 3 lines 1-25)
- b) creating a module which includes data related to said first unwind information and said first corresponding dynamically generated code (APA, "pseudo-modules are created. These pseudo-modules contain data about the dynamically generated code(e.g. instrumented code) and the corresponding unwind information," page 3 lines 10-25)
- c) providing an application program interface which allows said data to be registered such that dynamic registration of said first unwind information and said first corresponding dynamically generated code is enabled (APA, "an application program interface invocation code sequence is coupled to the dynamically generated code. The application program interface invocation code sequence operates in conjunction with the application program interface to facilitate the use of the pseudo-modules during registration of the unwind information," page 3 lines 1-25)
- d) coupling an application program interface invocation code sequence to said first corresponding dynamically generated code such that upon execution of said first corresponding dynamically generated code, said application program interface invocation code sequence instructs said application program interface to facilitate

registration of said data (APA, "an application program interface invocation code sequence is coupled to the dynamically generated code. The application program interface invocation code sequence operates in conjunction with the application program interface to facilitate the use of the pseudo-modules during registration of the unwind information," page 3 lines 1-25) as claimed.

Per claim 2:

The rejection of claim 1 is incorporated, and further, APA discloses:

- e) repeating steps b) through d) for second dynamically generated code wherein said second dynamically generated code was produced prior to producing said first unwind information and said first corresponding dynamically generated code, and generating unwind information corresponding to said second dynamically generated code (APA, "This registration, enabled by the pseudo-modules, in a centralized place allows easy and effective synchronization and eliminates the need to update unwind tables," page 3 lines 1-25) as claimed.

Per claim 3:

The rejection of claim 2 is incorporated, and further, APA discloses:

- step e) is performed only when said second dynamically generated code has a corresponding return address which is called by said first corresponding dynamically generated code (APA, "This registration, enabled by the pseudo-modules, in a centralized place allows easy and effective synchronization and eliminates the need to

update unwind tables," page 3 lines 1-25) as claimed.

Per claim 4:

The rejection of claim 1 is incorporated, and further, APA discloses:

-detecting said request for said first unwind information related to said first corresponding dynamically generated code by intercepting a call to a stack unwinding mechanism (APA, "This registration, enabled by the pseudo-modules, in a centralized place allows easy and effective synchronization and eliminates the need to update unwind tables," page 3 lines 1-25) as claimed.

Per claim 5:

The rejection of claim 4 is incorporated, and further, APA discloses:

- said corresponding return address of said second corresponding dynamically generated code is obtained by an address mechanism coupled to said stack unwinding mechanism (APA, "an IA-64 architecture by Intel...the runtime architecture uses unwind information to perform the task of unwinding..."an application program interface invocation code sequence is coupled to the dynamically generated code. The application program interface invocation code sequence operates in conjunction with the application program interface to facilitate the use of the pseudo-modules during registration of the unwind information," page 3 lines 1-25) as claimed.

Per claim 6:

The rejection of claim 1 is incorporated, and further, APA, Hundt, and Cierniak disclose:

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-said first corresponding dynamically generated code is comprised of instrumented code (APA, "dynamically generated code (e.g. the instrumented code)," page 3 lines 1-25) as claimed.

Per claim 7:

The rejection of claim 1 is incorporated, and further, APA, Hundt, and Cierniak disclose:

-said second corresponding dynamically generated code is comprised of instrumented code (APA, "dynamically generated code (e.g. the instrumented code)," page 3 lines 1-25) as claimed.

Per claims 8-14, they are the computer-readable medium versions of claims 1-7, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-7 above.

Per claims 15-21, they are the apparatus versions of claims 1-7, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-7 above.

8. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Hundt (HP Caliper- An Architecture for Performance Analysis Tool, 10/2000).

Per claim 1:

Hundt discloses:

- a) detecting a request for first unwind information related to first corresponding dynamically generated code (Hundt, page 2 HP Caliper Architecture, page 3 paragraph 2-3, page 4 4. Dynamic Instrumentation, first paragraph)
- b) creating a module which includes data related to said first unwind information and said first corresponding dynamically generated code (Hundt, Caliper API, Fig 1, section 4:1 Algorithm)
- c) providing an application program interface which allows said data to be registered such that dynamic registration of said first unwind information and said first corresponding dynamically generated code is enabled ( Hundt, Caliper API, Fig 1, section 4.1 Algorithm)
- d) coupling an application program interface invocation code sequence to said first corresponding dynamically generated code such that upon execution of said first corresponding dynamically generated code, said application program interface invocation code sequence instructs said application program interface to facilitate registration of said data (Hundt, Caliper API, Fig 1, page 5-6 section 4.1 Algorithm) as claimed.

Per claim 2:

The rejection of claim 1 is incorporated, and further, Hundt discloses:

- e) repeating steps b) through d) for second dynamically generated code wherein said second dynamically generated code was produced prior to producing said first unwind information and said first corresponding dynamically generated code, and generating



unwind information corresponding to said second dynamically generated code ( Hundt, section 4.1 Algorithm, page 5, right column, paragraphs 6-7, page 6, right column, paragraphs 3-5) as claimed.

Per claim 3:

The rejection of claim 2 is incorporated, and further, Hundt discloses:

- step e) is performed only when said second dynamically generated code has a corresponding return address which is called by said first corresponding dynamically generated code (Hundt, section 4.1, page 6, right column, paragraphs 3-5, and 7) as claimed.

Per claim 4:

The rejection of claim 1 is incorporated, and further, Hundt discloses:

- detecting said request for said first unwind information related to said first corresponding dynamically generated code by intercepting a call to a stack unwinding mechanism (Hundt, section 4.1, page 6, right column, paragraphs 3-5, and 7) as claimed.

Per claim 5:

The rejection of claim 4 is incorporated, and further, Hundt discloses:

- said corresponding return address of said second corresponding dynamically generated code is obtained by an address mechanism coupled to said stack unwinding

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mechanism (Hundt, section 4.1, page 6, right column, paragraphs 3-5, and 7) as claimed.

Per claim 6:

The rejection of claim 1 is incorporated, and further, Hundt discloses:

-said first corresponding dynamically generated code is comprised of instrumented code (Hundt, page 5 right column, 4.1 Algorithm, dynamic instrumentation algorithm, 1.Attach and Inject) as claimed.

Per claim 7:

The rejection of claim 1 is incorporated, and further, Hundt discloses:

-said second corresponding dynamically generated code is comprised of instrumented code (Hundt, page 5 right column, 4.1 Algorithm, dynamic instrumentation algorithm, 1.Attach and Inject) as claimed.

Per claims 8-14, they are the computer-readable medium versions of claims 1-7, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-7 above.

Per claims 15-21, they are the apparatus versions of claims 1-7, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-7 above.

9. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Cierniak et al. (Practicing JUDO : Java™ Under Dynamic Optimizations, 5/2000) hereinafter referred to as "Cierniak."

Per claim 1:

Cierniak discloses:

- a) detecting a request for first unwind information related to first corresponding dynamically generated code (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy Exceptions)
- b) creating a module which includes data related to said first unwind information and said first corresponding dynamically generated code (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy Exceptions)
- c) providing an application program interface which allows said data to be registered such that dynamic registration of said first unwind information and said first corresponding dynamically generated code is enabled (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy Exceptions)
- d) coupling an application program interface invocation code sequence to said first corresponding dynamically generated code such that upon execution of said first corresponding dynamically generated code, said application program interface invocation code sequence instructs said application program interface to facilitate registration of said data (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy Exceptions) as claimed.

Per claim 2:

The rejection of claim 1 is incorporated, and further, Cierniak discloses:

- e) repeating steps b) through d) for second dynamically generated code wherein said second dynamically generated code was produced prior to producing said first unwind information and said first corresponding dynamically generated code, and generating unwind information corresponding to said second dynamically generated code (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy Exceptions) as claimed.

Per claim 3:

The rejection of claim 2 is incorporated, and further, Cierniak discloses:

- step e) is performed only when said second dynamically generated code has a corresponding return address which is called by said first corresponding dynamically generated code (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy Exceptions) as claimed.

Per claim 4:

The rejection of claim 1 is incorporated, and further, Cierniak discloses:

- detecting said request for said first unwind information related to said first corresponding dynamically generated code by intercepting a call to a stack unwinding mechanism (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy Exceptions) as claimed.

Per claim 5:

The rejection of claim 4 is incorporated, and further, Cierniak discloses:

- said corresponding return address of said second corresponding dynamically generated code is obtained by an address mechanism coupled to said stack unwinding mechanism (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy Exceptions) as claimed.

Per claim 6:

The rejection of claim 1 is incorporated, and further, Cierniak discloses:

-said first corresponding dynamically generated code is comprised of instrumented code (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy Exceptions) as claimed.

Per claim 7:

The rejection of claim 1 is incorporated, and further, Cierniak discloses:

-said second corresponding dynamically generated code is comprised of instrumented code (Cierniak, page 19, 5.1 Dynamic inline patching, page 20 5.4 Lazy Exceptions) as claimed.

Per claims 8-14, they are the computer-readable medium versions of claims 1-7, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-7 above.

Per claims 15-21, they are the apparatus versions of claims 1-7, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-7 above.

### ***Response to Arguments***

10. Applicant's arguments filed 2/7/2005 have been fully considered but they are not persuasive.

Per claim 1:

The applicant simply states that: APA does not teach or suggest dynamic registration of first unwind information...application program interface which allows said data to be registered...corresponding dynamically generated code is enabled." Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

In response, as previously recited, APA states that the "pseudo-modules are utilized by the software component seeking to register an instrumented function along with its unwind information ( page 3 lines 1-25)" and these "pseudo-modules contain data about the dynamically generated code(e.g. instrumented code) and the corresponding unwind information (page 3 lines 10-25)." Further, the applicant referred page 12 lines 5-10 concerning "providing an application program interface...is enabled." However, in the background section of the instant application, APA states that "an application program interface invocation code sequence is coupled to the dynamically

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generated code (page 3 lines 1-25) and the "application program interface invocation code sequence operates in conjunction with the application program interface to facilitate the use of the pseudo-modules during registration of the unwind information (page 3 lines 1-25)." Therefore, APA discloses the limitations in claim 1. If applicant means anything more, this must be brought out in the claims to further clarify the invention.

The applicant simply states that HP Caliper and Cierniak do not disclose the limitations in the claim 1. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Further, Cierniak and Caliper disclose unwind information or registering data let alone providing an application program interface...enabled (Cierniak, the unwind process in section 3.2 and HP Caliper, Hundt, Caliper API, Fig 1, section 4.1 Algorithm). If applicant means anything more, this must be brought out in the claims to further clarify the invention.

Per claims 8 and 15:

The applicant states that these claims are allowable for the reasons set forth in connection with claim 1. As shown above, the rejections of claim 1 by APA, Caliper, and Cierniak are maintained, and accordingly, the rejections of claims 8 and 15 are also maintained.

Per claims 2-7, 9-14, and 16-21:

The applicant states that claims 2-7, 9-14, and 16-21 are allowable as being dependent on the allowable base claims. As has been shown above, the rejections of the independent claims 1, 8, 15 by APA, Caliper, and Cierniak are maintained, the argument that claims 2-7, 9-14, and 16-21 are allowable as being dependent on the allowable base claims is considered moot. Accordingly, the rejections of claims 2-7, 9-14, and 16-21 are also maintained.

### ***Conclusion***

**11. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.



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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Insun Kang whose telephone number is 571-272-3724.

The examiner can normally be reached on M-F 7:30-4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on 571-272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

I. Kang  
Examiner  
6/7/2005

  
KAKALI CHAKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100